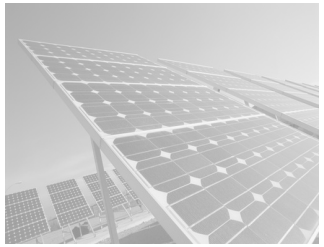
液晶 DISPLAY･LED



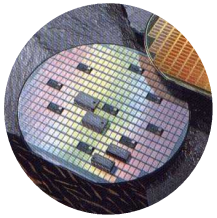
SOLAR･2次 電池･PCB

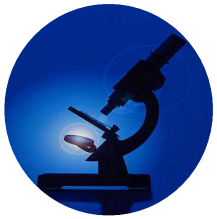
SEMICONDUCTOR

BIO･MEDICAL

FA SYSTEM･CHEM

CREATIVE MATERIALS





Canosis Co., Ltd

キャノシス株式会社

▶INDEX

▶製造装置用部品・素材

- HYBRID CERAMIC BEARING
  (CERAMIC BEARINGS, HYBRID BEARINGS, POLYMER BEARINGS など)

- 液晶 DISPLAY
  (FILTER CARTRIDGE, ROBOT-PAD, SCRIBING WHEEL など)

- SOLAR (太陽電池)
  (TRANSPORT-WHEEL, CFC-TRAY, QUARTZ-TUBE, CASSETTE など)

- LED, 2次 電池, PCB
  (SAPHIRE WAFER, CASSETTE, BI-POLAR PLATE, TRANSPORT ROLLER, PI-FILM など)

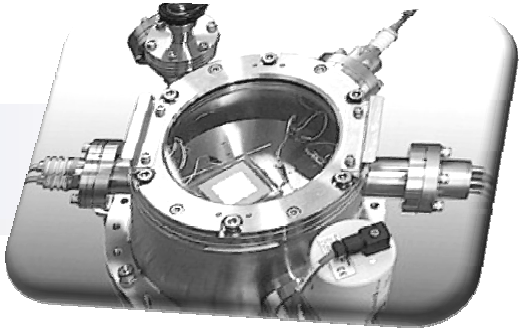
- SEMICONDUCTOR
  (FOSB, FOUP, CASSETTE, POLISHING CARRIER など)

- PVA SPONGE BRUSH (ROLL & DISK)

▶製造装置分野

- 液晶 DISPLAY : RUBBING ROLLER (AL+HARD ANODIZING, CARBON ROOLER)

▶ 部品･素材 事業 分野



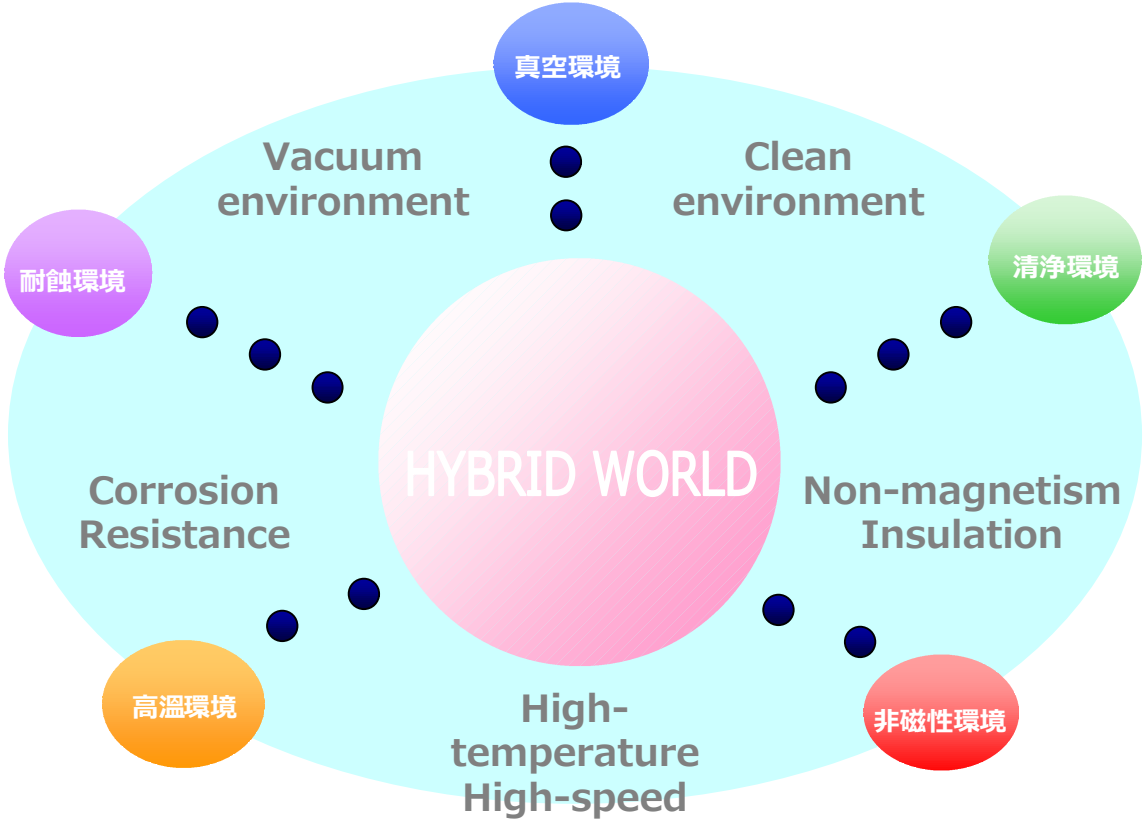
- ▶ HYBRID CERAMIC BEARING
- ▶ 液晶 DISPLAY-製造装置用部品･素材
  - ・HYBRID-ROBOT-PAD（CVD、SPUTTER）
  - ・CERIUM-HYBRID-POLISHING-WHEEL
  - ・HYBRID-FILTER-CARTRIDGE
  - ・SCRIBING-HYBRID-WHEEL, AXLES
- ▶ SOLAR-製造装置用部品･素材
- ▶ LED、2次電池-製造装置用部品･素材
- ▶ SEMICONDUCTOR-製造装置用部品･素材
- ▶ PVA BRUSH (ROLL & DISK)

▶ Typical examples of Hybrid Ceramic Bearings

ハイブリッドベアリング技術.

ハイブリッドベアリングは、特殊環境用(extreme special environment)に開発された製品です。
液晶ディスプレイ、半導体、太陽電池、医療機器、食品、化学プラントPCB、フィルム、産業などの科学環境、低/高温度環境、真空環境、
クリーン環境、絶縁環境などの多様な使用環境条件に合わせお使いいただける新しい製品です。

特に,真空用ハイブリッドベアリングは、
無給油潤滑条件下でも高速回転が可能な「TUNGSTEN + MoS2 + GRAPHITE」のトリプルDISULFIDE COATING技術を採用した製品として、
液晶ディスプレイ-真空ポンプ、半導体-真空ポンプ、高真空用に合わせて開発された製品です。
無給油環境にもハイブリッドの卓越した性能を発揮いたします。



▶ Hybrid Ceramic Bearing and Application -1-

Vacuum Environment

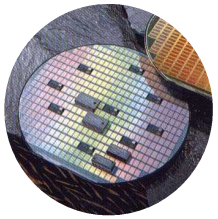
- **真空環境 (真空PUMP専用) • VP Series**
  - ① Bore/Outer : Martensite Stainless (Ni5G) / High speed tool steel / SUJ2
  - ② Ball/Roller : Ceramic Si_3N_4 / Martensite Stainless / High speed tool steel / SUJ2
  - ③ Retainer : Non-full ball / Special Polymer
  - ④ Lubrication : Self Solid Film Coating
  - ⑤ Shielded or Seal : Non (open)
  - ⑥ Temperature : 低温~350℃/Max
  - ⑦ Type : Deep Groove Ball Bearing / Angular Contact Ball Bearing
  - ⑧ 用途 : 半導体用真空ポンプ / 液晶ディスプレイ用真空ポンプ / その他の真空ポンプなど

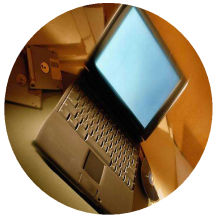
Clean Stainless Series

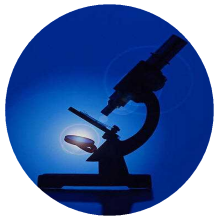
- **耐蝕環境 • 清浄環境 • CSP (WIT_W_S) Series**
  - ① Bore/Outer : Austenite-Martensite Stainless / W-Stainless (Ni5G)
  - ② Ball/Roller : Martensite Stainless / Ceramic Si_3N_4 / ZrO_2 / SiC
  - ③ Retainer : Fluorocarbon Resin / 特殊樹脂 / Austenite Stainless
  - ④ Lubrication : Clean Grease / Aqua Grease / フッ素系 Grease / 固体潤滑
  - ⑤ Shielded or Seal : Non / Austenite Stainless / Nitrile Rubber
  - ⑥ Temperature : 低温~250℃/Max
  - ⑦ Type : Deep Groove Ball Bearing / Angular / Thrust / UC / Roller / Special Design
  - ⑧ 用途 : 液晶ディスプレイ& 半導体用移送装置 / Clean Oven / BIO関連機器など

Hybrid Bearings

- **耐蝕環境 • 清浄環境 • 高温環境 • 真空環境 • HP Series**
  - ① Bore/Outer : Martensite & Austenite Stainless / Tungsten / SUJ2
  - ② Ball/Roller : Ceramic Si3N4 / ZrO2 / SiC
  - ③ Retainer : Full-Ball / Fluorocarbon Resin / 特殊樹脂 / Austenite Stainless
  - ④ Lubrication : Self Solid Film Coating / フッ素系 Grease / 固体潤滑
  - ⑤ Shielded or Seal : Austenite Stainless / Nitrile Rubber / Viton Rubber
  - ⑥ Temperature : 低温~350℃/Max
  - ⑦ Type : Deep Groove Ball Bearing / Angular / Thrust / UC / Roller
  - ⑧ 用途 : 液晶ディスプレイ / 半導体洗浄装置 / 化学 / BIO / Medical / 繊維機器など



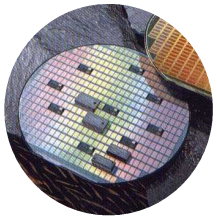




▶ Hybrid Ceramic Bearing and Application -2-

- **非磁性環境・絶縁環境・清浄環境・真空環境・EMP Series**
  - ① Bore/Outer : Ceramic / Beryllium / Non-magnetic Stainless / Titan合金
  - ② Ball/Roller : Ceramic Si_3N_4 / ZrO_2 / SiC
  - ③ Retainer : Full-Ball / Fluorocarbon Resin / 特殊樹脂
  - ④ Lubrication : フッ素系Grease / 固体潤滑
  - ⑤ Shielded or Seal : Austenite Stainless, Nitrile Rubber
  - ⑥ Temperature : 低温~800℃/Max
  - ⑦ Type : Deep Groove Ball Bearing / Angular / Thrust / UC / Roller
  - ⑧ 用途 : 液晶ディスプレイ / 半導体 / MOTOR / 電子BEAM / 露光装置 / 検査装置など

Electric-magnetic-field



all Ceramic Bearings

- **耐蝕環境・清浄環境・高温環境・真空環境・ACP(Z/SC/SN) Series**
  - ① Bore/Outer : Si_3N_4 / SiC / ZrO_2
  - ② Ball/Roller : Ceramic Si_3N_4 / SiC / ZrO_2
  - ③ Retainer : Full-Ball / Fluorocarbon Resin / 特殊樹脂
  - ④ Lubrication : フッ素系Grease / 固体潤滑
  - ⑤ Shielded or Seal : Open / Ceramic Al_2O_3 / 特殊樹脂
  - ⑥ Temperature : 低温~800℃/Max
  - ⑦ Type : Deep Groove Ball Bearing / Angular / Thrust / UC Bearing
  - ⑧ 用途 : 液晶ディスプレイ / 半導体 / 食品、化学 / Clean Oven / 殺菌装置など

- **清浄環境・耐蝕環境・CPP Series**
  - ① Bore/Outer : PI /PEEK / PCTFE / 特殊樹脂
  - ② Ball/Roller : Ceramic ZrO_2 / Si_3N_4 / SiC / 特殊Glass /Stainless / 特殊樹脂
  - ③ Retainer : Full Ball / Fluorocarbon Resin / 特殊樹脂
  - ④ Lubrication : Non / 固体潤滑 / Clean Grease / Aqua Grease
  - ⑤ Shielded or Seal : Open / 特殊樹脂
  - ⑥ Temperature : 低温~250 ℃
  - ⑦ Type : Deep Groove Ball Bearing / Angular / UC / Thrust / Special Design
  - ⑧ 用途 : 液晶ディスプレイ / 半導体 / 洗浄装置 / 食品機械 / 化学設備 / 高湿度装置など

Corrosion Polymer

▶ Hybrid Ceramic Bearing and Application -3-

• 清浄環境 • 真空環境 • 耐蝕環境 • BTP Series

① Body : Austenite Stainless / PEEK / PI / 特殊樹脂 / Ceramic Al_2O_3
② Main Ball : PEEK / PI / PCTFE / 特殊樹脂 / Ceramic ZrO_2 / Si_3N_4 / SiC
③ Sub Ball : Ceramic ZO_2 / Si_3N_4 / SiC / Martensite-Asustenite Stainless
④ Body Cap : Ceramic / PI / PEEK / 特殊樹脂
⑤ Lubrication : Non
⑥ Temperature : 低温~400 ℃
⑦ Type : M4~M16 / P4~P14 / F6~F20
⑧ 用途 : 液晶ディスプレイ / 半導体 / 検査機器 / Align Inspector

Clean Ball Transfer

High Temperature

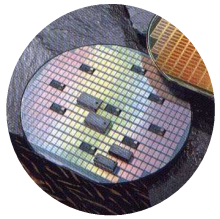
• 清浄環境 • 高温環境 • 真空環境 • HTP Series

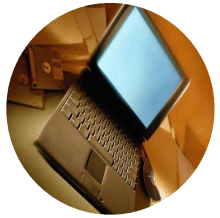
① Bore/Outer : Ceramic Si_3N_4 / SiC / ZrO_2 / SKD / Tungsten / Martensite Stainless
② Ball/Roller : Ceramic Si_3N_4 / SiC / ZrO_2 / Martensite Stainless+MoS_2 Coating
③ Retainer : Full-Ball / Fluorocarbon Resin / 特殊樹脂
④ Lubrication : フッ素系 Grease / 固体潤滑
⑤ Shielded or Seal : Open / Austenite Stainless / 特殊樹脂
⑥ Temperature : 低温~800℃/Max
⑦ Type : Deep Groove Ball Bearing / Angular / Thrust / UC Bearing
⑧ 用途 : 液晶ディスプレイ / 半導体 / Clean Oven / 殺菌装置など

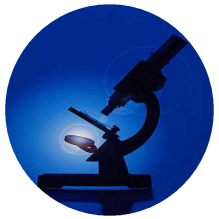
• 真空環境 • 耐蝕環境 • HSP Series

① Bore/Outer : Ceramic Si_3N_4 / High Speed Steel / Carbon Steel
② Ball/Roller : Ceramic Si3N4 / Carbon Steel
③ Retainer : Full-Ball / Fiber Reinforced Phenolic
④ Lubrication : フッ素系 Grease / High Speed Oil
⑤ Shielded or Seal : Open / Austenite Stainless
⑥ Temperature : 低温~400℃/Max
⑦ Type : Deep Groove Ball Bearing / Angular Contact Bearing
⑧ 用途 : 液晶ディスプレイ / 半導体 / 繊維機器 / 歯科用機器 / 真空ポンプなど

High Speed (precision)

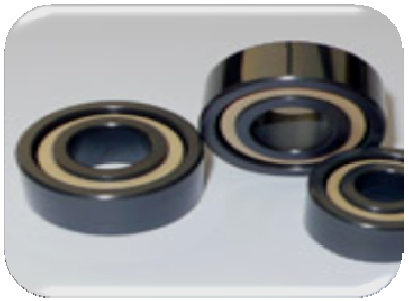




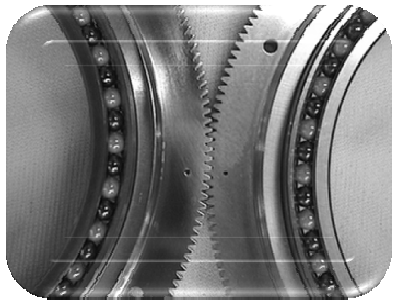


▶ Hybrid Ceramic Bearing and Application -4-

CLEAN BALL TRANSFER

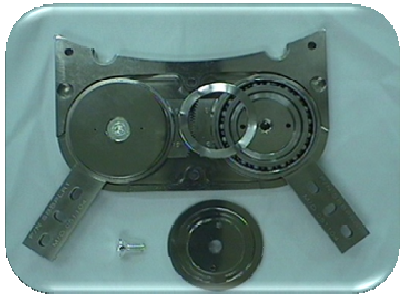


CERAMIC BALL BEARING



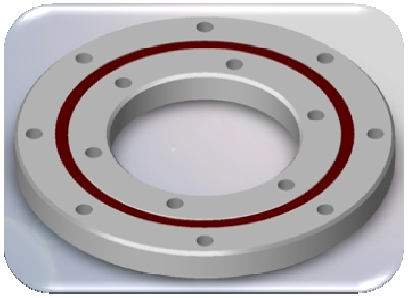
ROBOT BEARING ASS'Y

HYBRID ROLLER BEARING



HP/VHP HYBRID BEARING SET

ROBOT-SLIM HYBRID BEARING



CLOSE ROLLER BEARING

CERAMIC BALL BEARING

自己潤滑 COATING

VACUUM PUMP BRG

ALL CERAMIC BEARING

HYBRID BEARING(偏光フィルム用)

▶ 液晶 DISPLAY - 製造装置用部品·素材

▶ 液晶 DISPLAY-製造装置用部品·素材

- HYBRID-ROBOT-PAD. AF230 Series
- Cerium Hybrid Polishing Wheel

▶ 液晶 DISPLAY - 部品•素材 分野 (HYBRID-ROBOT-PAD. AF230 Series)

◎ ROBOT-HYBRID-PAD(AF230) 特長

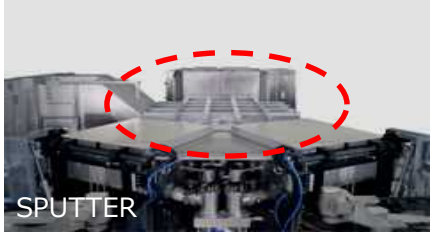
1.高い耐熱性(初段階耐熱性 300 ℃/瞬間使用温度)を保持

3. 連続使用温度(230℃) が高く、FKM対比及び耐化学性に優れる

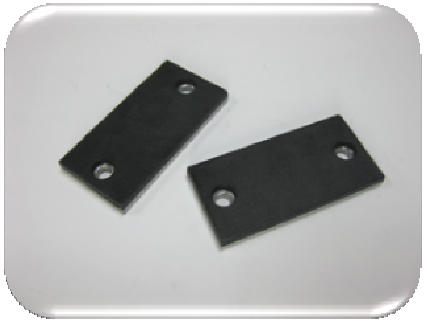
4.低比重及び高弾性体で耐腐食性に優れ、物性変化が極めて低い

5. ガラスとの密着性に優れ、スライディングを防止.

6. MOLDING ALC加圧PRESS方式で剥離（外れる現象）がない.



ROBOT-PAD (WI-B01)



ROBOT-PAD (WI-D01/D02)

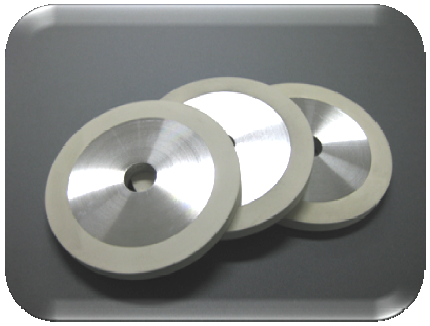
ROBOT-PAD (WI-B02)

ROBOT-PAD (WI-D03/D04)

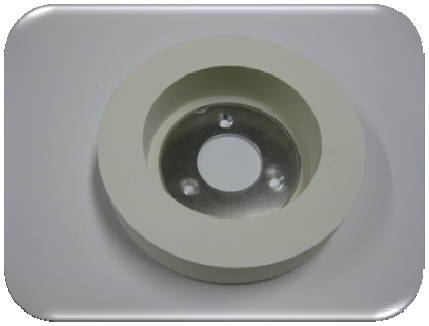
ROBOT-PAD (WI-B03)

ROBOT-PAD (WI-D05)

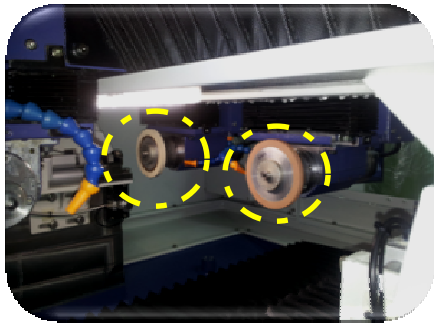
▶ 液晶 DISPLAY - 部品•素材 分野 (Cerium Hybrid Polishing Wheel)



CHP-115U10-12M



CHP-150U30-12M



CHP-115U10-12M適用例

CHP-150(130)U30-12M

CHP-150U30-4M

CHP-115U10-12M

◎ **CERIUM POLISHING WHEEL**

CERIUM-HYBRID-POLISHING-WHEELは
新技術工法で開発された長いライフタイムを実現する製品です。
硬度85 (shore A)、表面 (気泡 “0”) 及び内部の気泡がないため、
製品のロングライフタイムに寄与し、優れたコストパフォーマンスを実現します。

Type	OD	T	ID	Hardness
FLAT WHEEL (AL-HOLDER)	115/120/130	10/15/20/30	90/100	shore A 85
CUP WHEEL (AL-HOLDER)	150/130	30、35、40	70/100	

▶ HYBRID FILTER CARTRIDGES -1-

▶HYBRID FILTER CARTRIDGE Seriesは、新しく開発された新製品で、部品・素材開発事業分野の新規アイテムとして既存製品との代替が可能です。
▶HYBRID FILTER CARTRIDGEは、使用の容易性と既存性能の利点を併せ持つニュータイプの製品です。

WIM-PTFE PLEATED FILTER CARTRIDGES

WIM-PES PLEATED FILTER CARTRIDGES

WIM-PVDF PLEATED FILTER CARTRIDGES

POLYCLEAN FILTER HOUSING

WIQF Series Filter Cartridges

WIPHD Series Filter Cartridges

CAPSULE FILTER

WIM-N6 PLEATED FILTER CARTRIDGES

WIBC FILTER CARTRIDGES

▶ HYBRID FILTER CARTRIDGES -2-

▶Removal Rating：
0.01/0.02/0.05/0.1/0.22/0.45/0.5/0.8/1/1.2/3/5/10/20/50/70/100/120 ㎛

▶O-Ring (Seal) Material：
SILICONE/EPDM/NBR/VITON/TEFLON/FKM & Special OEM (SINGLE & DOUBLE)

▶Media Type：
PP Plated/PP Melt Blown/PES/PTFE/W-PTFE/GF/PET etc

▶LENGTH：
9.75“(248mm) / 9.87“(250mm) / 10“(254mm) / 20“(508mm) / 30“(762mm) /
40“(1016mm) / 50“ (1270mm) / 60“(1524mm) / 285mm(Size 1 bag) / 685mm(Size 1 bag)

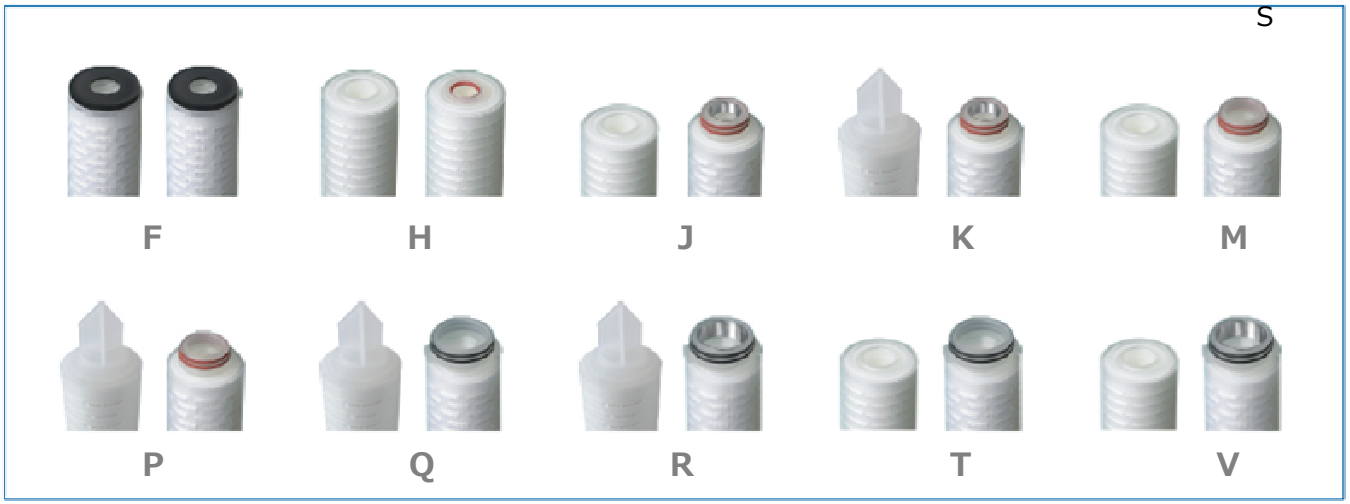
▶END CAP Configuration：
F/H/J/K/M/P/Q/R/T/V etc

WI-SCC Series Pleated Filter Cartridges-PP/GF

WIM-PP PLEATED FILTER CARTRIDGES

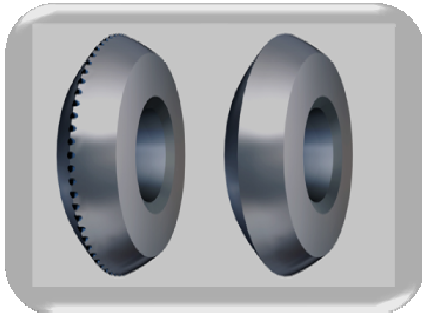
LC用 FILTER-開発中

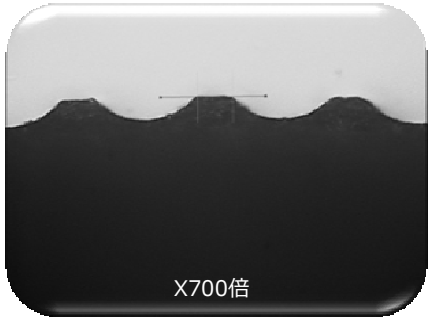
End Cap Configuration

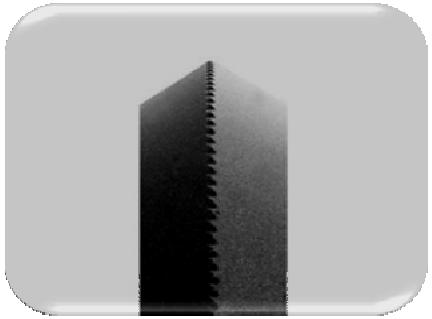


▶ 液晶DISPLAY : SCRIBING Applications

GLASS SCRIBING WHEEL





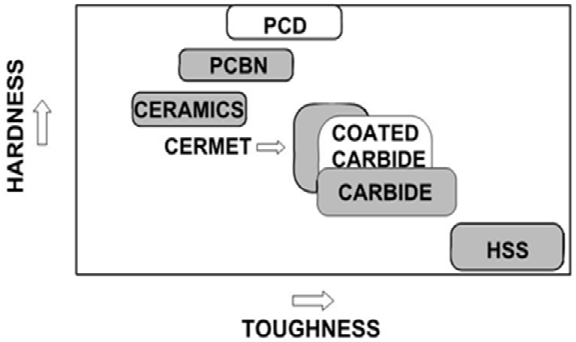


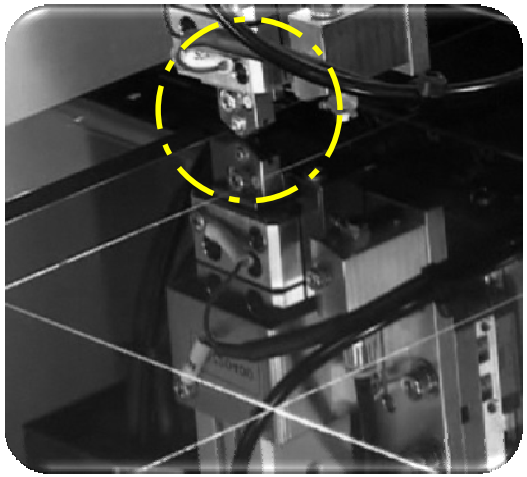
1. Scribing wheel 'W' Series
   - ① Outer Diameter: 1.80~4.0mm
   - ② Inner Diameter: 0.8mm / 1.0mm
   - ③ Thickness: 0.65mm
   - ④ Angle: 95° ~150°
   - ⑤ Surface Roughness: < 0.0001mm
   - ⑥ Tolerance: 0.02~0.05mm
   - ⑦ Scoring Depth: 0.1mm
   - ⑧ Material: PCD, Tungsten Carbide
2. Axle (shaft or pin)
   - ① Diameter: 0.8mm / 1.0mm
   - ② Length: 3.8~10.0mm
   - ③ Surface Roughness: < 0.0001mm
   - ④ Material: PCD / Tungsten Carbide
3. Holder

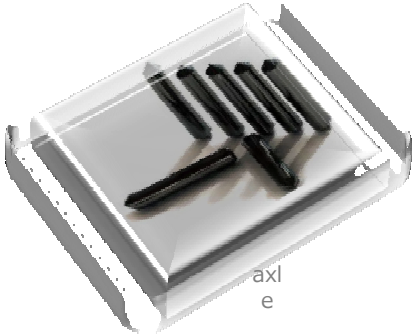
   WIA-H01 ･･･WIA-H10 TOTAL 11 Model
4. Remark

   LCD GLASS (TFT-LCD / OLED / PDP etc)
5. PCD-Poly Crystal Diamond
6. Holder Reference : model & image

CUTTING TOOL MATERIALS







▶ 液晶 DISPLAY : SCRIBING HYBRID WHEEL & AXLES (B)

WHEEL	PCD HYBRID	PCD NORMAL	WC-Co NORMAL	WC-Co HYBRID
PRODUCTS PICTURES				
MATERAL	POLY CRYSTAL DIAMOND	POLY CRYSTAL DIAMOND	TUNGSTEN CARBIDE	TUNGSTEN CARBIDE
OUT DIAMETER	1.8mm~3.0mm	1.8mm~3.0mm	1.8mm~3.0mm	1.8mm~3.0mm
INNER DIAMETER	0.8mm / 1.0mm	0.8mm / 1.0mm	0.8mm / 1.0mm	0.8mm / 1.0mm
ANGLE	95°~150°	95°~150°	95°~150°	95°~150°
PITCH QUANTITY	100ea~300ea	-	-	3ea~500ea
PITCH SIZE	DEPTH 2㎛~10㎛ WIDTH 4㎛~40㎛	-	-	DEPTH 2㎛~5㎛ WIDTH 4㎛~15㎛
CAPACITY	3,000EA/MONTH	10,000EA/MONTH	10,000EA/MONTH	10,000EA/MONTH

AXLE-PIN	PCD	WC-Co
PRODUCTS PICTURES		
MATERAL	POLY CRYSTAL DIAMOND	TUNGSTEN CARBIDE
DIAMETER	0.8mm	0.8mm
LENGTH	3.8mm~6mm	3.8mm~10mm
CAPACITY	3,000EA/MONTH	120,000EA/MONTH

▶ 液晶 DISPLAY : SCRIBING HYBRID WHEEL-HOLDER (C)

WIA-H01

WIA-H02

WIA-H03

WIA-H04

WIA-H05

WIA-H06 (A/D)

WIA-H07

WIA-H08

WIA-H09

WIA-H10

▶液晶 DISPLAY - 部品•素材 分野 (PI-Film, Support pin, Roller, Guide etc)

EUV/IR-ROLLER (PI)

TRANSFER ROLLER (PI)

SUPPORT-LIFT-PIN (PI)

VACUUM PICK-UP TOOL

GLASS HOLDER-GUIDE (PI)

BOLT & SUPPORT SCREW (PI)

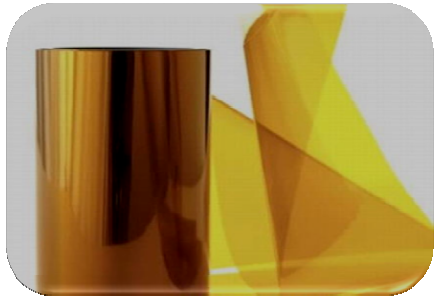
GUIDE BUSH (PI)

PROXIMITY PIN & GLASS HOLDER

THRUST & BEARING CAGE (PI)

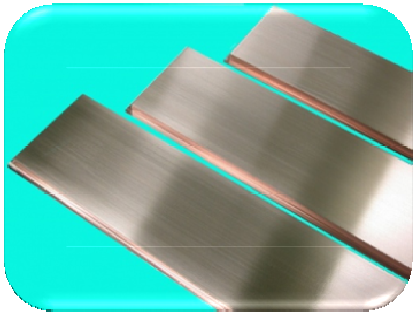
ROBOT-VACUUM-PAD (PI)

ROBOT-VACUUM-PAD

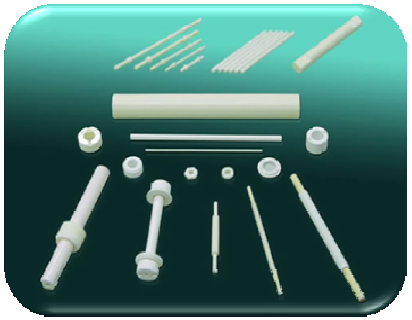


PI FILM (Polyimide)

▶ 液晶 DISPLAY - 部品•素材 分野 (ITO-TARGET, Robot Hand, Ceramic Part etc)

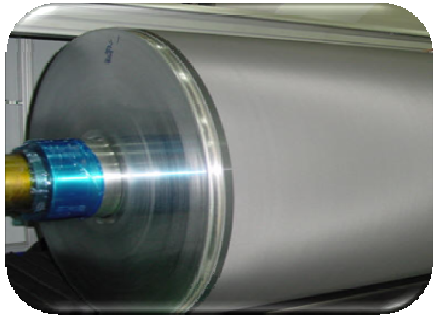


ITO-TARGET



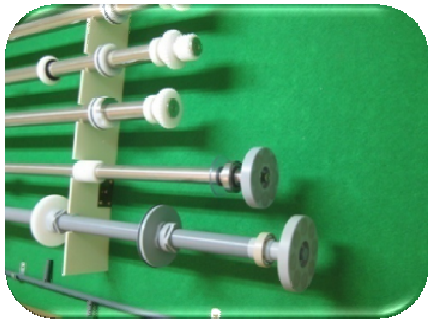
CERAMIC-PIN-BUSH-BOLT

PI COATING-ANILOX ROLL

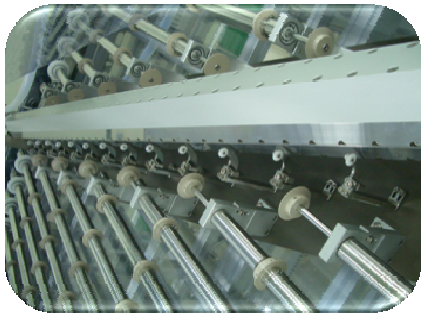


PI COATING-ANILOX ROLL

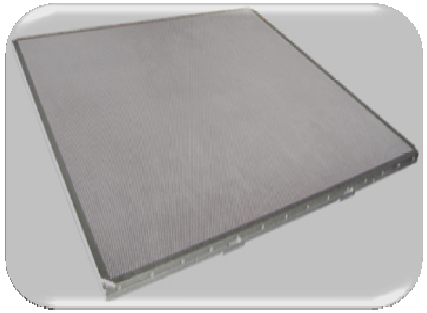
CARBON-SHAFT-MATERIAL



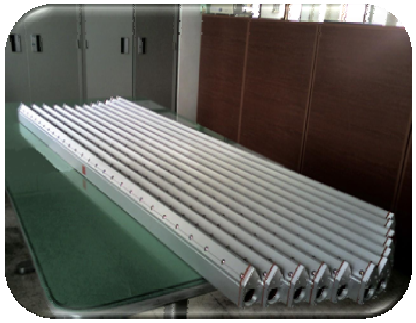
SHAFT (S304, PVC/CARBON)



G8/G7.5/G7/G6/G5.5 AIR-KNIFE

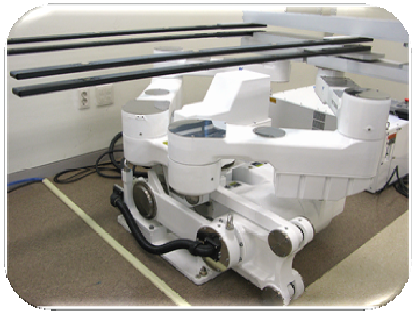


DIFFUSION-SHOWER PLATE

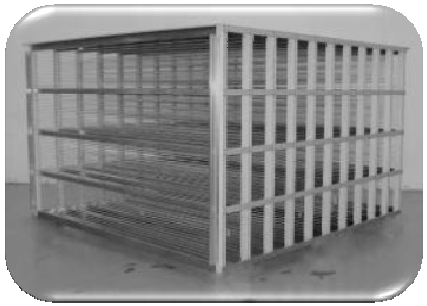


G8/ G7.5/G6 AIR-KNIFE

CFRP : ROBOT-HAND (FORK)



CFRP : ROBOT-HAND (FORK)



LCD GLASS-CELL CASSETTE

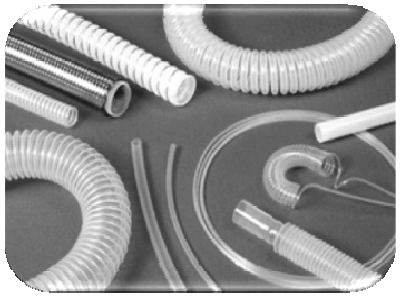
▶ 液晶 DISPLAY - 部品•素材 分野 (Roller, Polishing wheel etc)

OS-COUPLING (ETCH SPRAY)

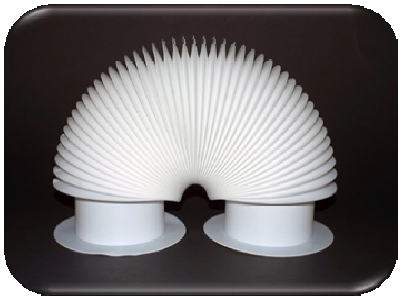
ROBOT ARM-VACUUM PAD

WET-PVA DISK BRUSH

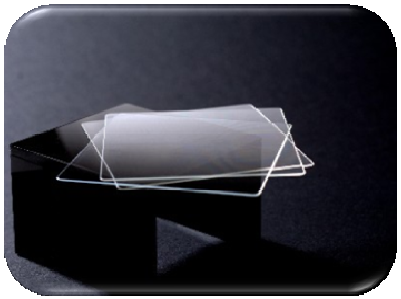
CLEAN OVEN-SUPPORT PIN



PFA COIL TUBE-FLEXIBLE TUBE

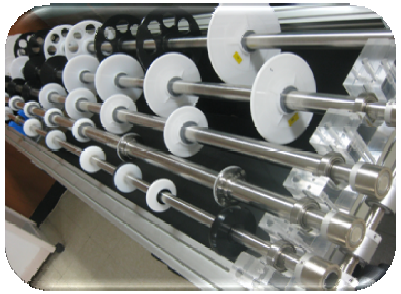


BELLOWS-PTFE, PFA



TSP用 STRENGTHEN GLASS

ITO_TAC FILM ROLL



ROLLER SHAFT ASSEMBLY

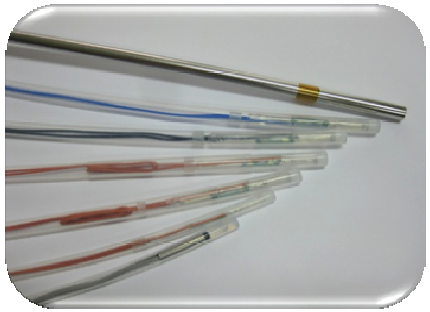
UPE ROLLER-AIR KNIFE

IR/UV-PEEK ROLLER

IR/UV-TEFLON ROLLER

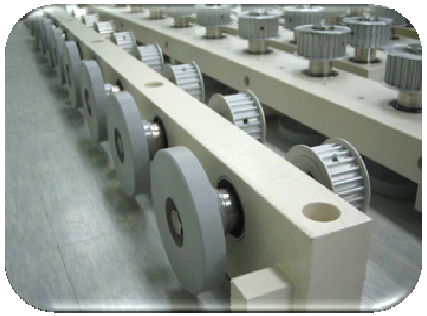
▶ 液晶 DISPLAY - 部品•素材 分野 (Sensor, Valve, Disk M/G Gear, Gear Box etc)

FLICKER SENSOR (LOWER)

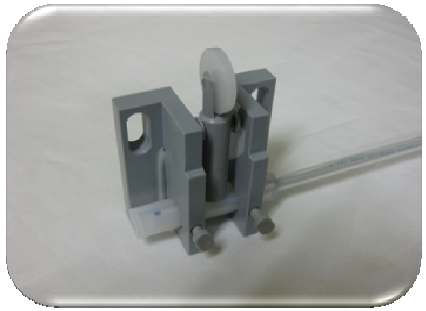


SENSOR (PFA ø5, 6, 8 etc)

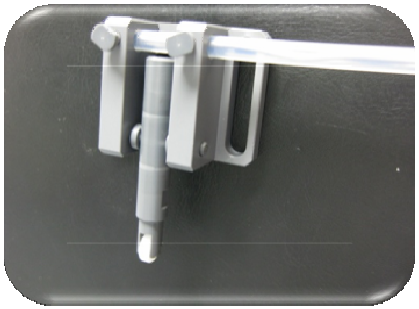
BOLT, NUT-PEEK, PVDF



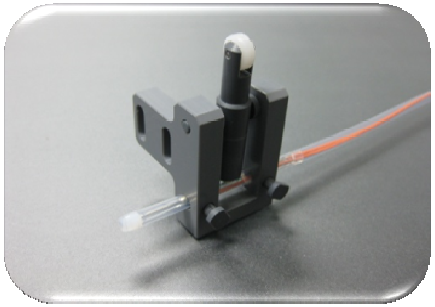
DISK MAGNET GEAR (PVC)



FLICKER SENSOR (LOWER)



FLICKER SENSOR (UPPER)



FLICKER SENSOR (SIDE-LOWER)

DISK MAGNET GEAR (S316)

FILTER CARTRIDGE

O-RING & SEALING

ROLL BRUSH-GEAR BOX. INNER

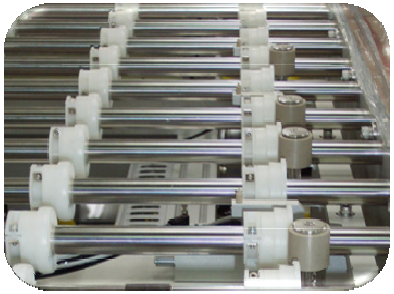
DRAIN & FLOW PVC VALVE

▶ 液晶 DISPLAY - 部品•素材 分野 (BEARING+ROLLER SHAFT ASS'Y)

ceramic ball HYBRID BEARING

ceramic ball POLYMER BEARING

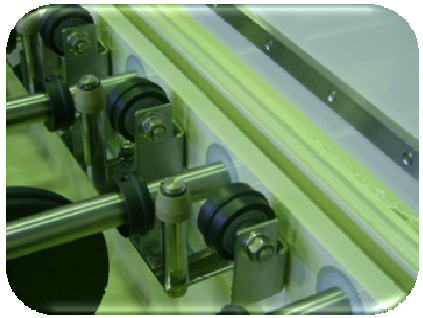
Conductivity BEARING



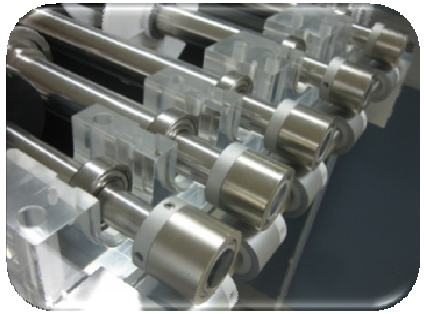
conveyor with GUIDE BEARING

INSPECTION CONVEYOR

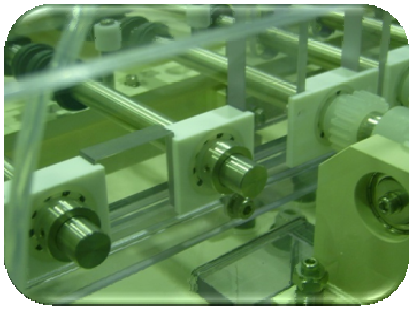
roller shaft CERAMIC BEARING



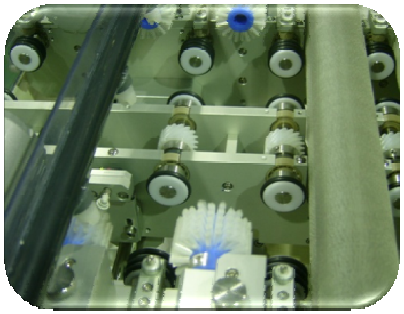
Wet free ROLLER BEARING



MAGNET GEAR & CLEAN BEARING



etching POLYMER BEARING

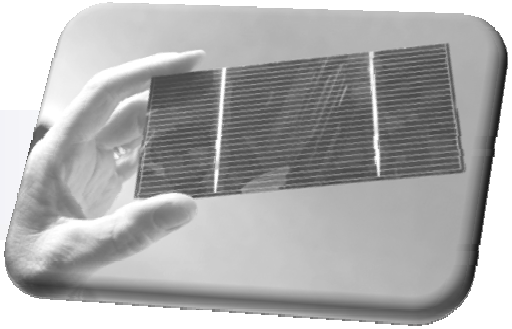


wet C/V PEEK BEARING

CLEAN BALL TRANSFER

HELICAL GEAR ASSEMBLY

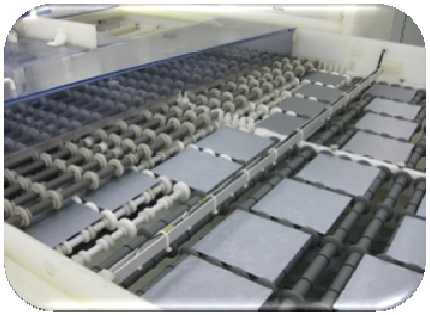
▶SOLAR - 製造装置用 部品・素材



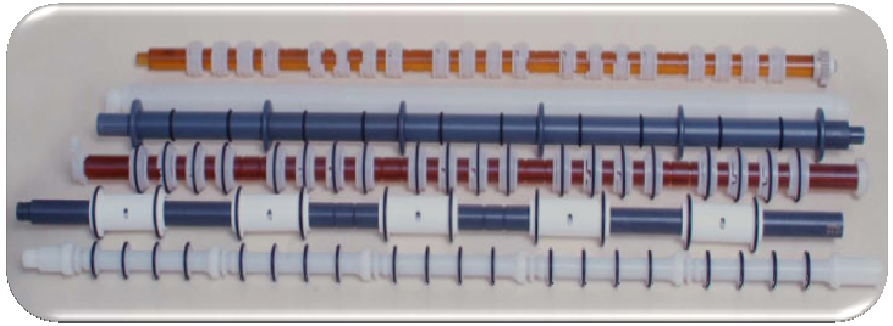
HYBRID WORLD

▶ SOLAR-Photovoltaic 部品・素材 分野 (Transport Wheel Assembly)

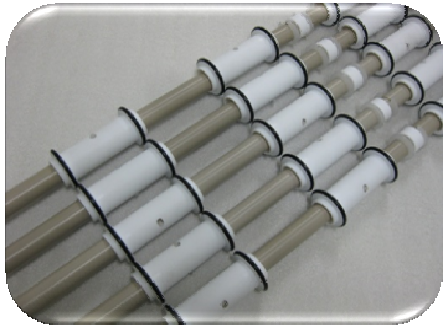
TRANSPORT WHEEL (5 LANE)



TRANSPORT WHEEL (8 LANE)



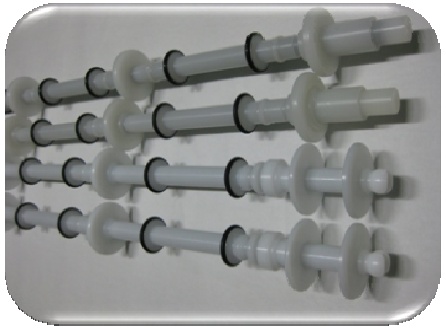
TRANSPORT WHEEL (PVDF, PVC, PTFE, PEI, PEEK etc)



TOP ROLLER (4/5/8 LANE)

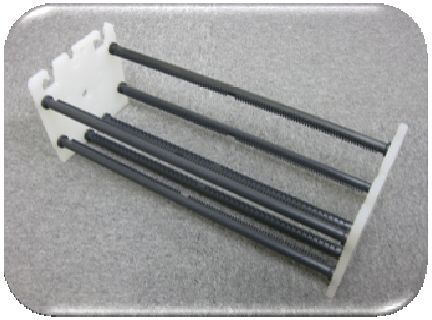
TOP ROLLER (4/5/8 LANE)

BOTTOM ROLLER (4/5/8 LANE)

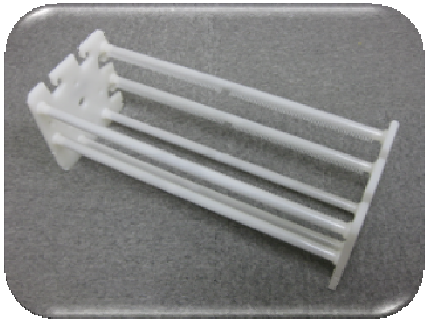


BOTTOM ROLLER (4/5/8 LANE)

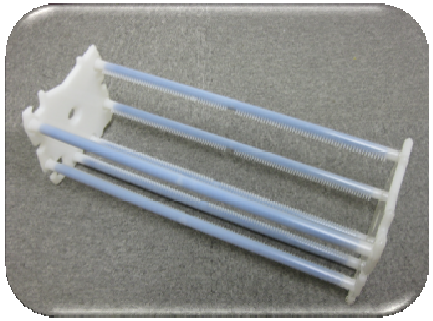
▶ SOLAR-Photovoltaic 部品・素材 分野 (TRC Carrier& Cassette, Etch Cassette etc)



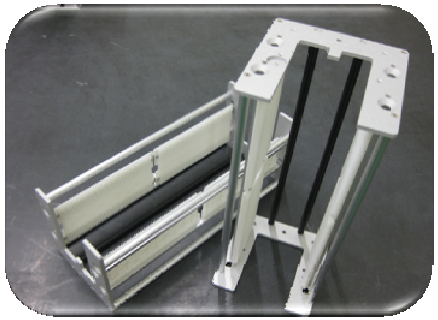
STANGL CARRIER (PP)



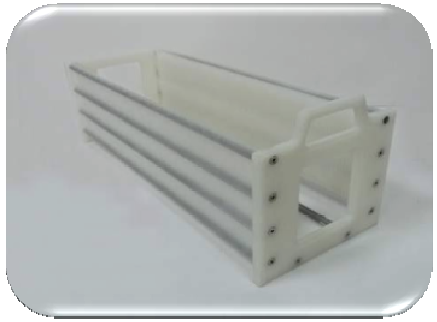
STANGL CARRIER (PVDF)



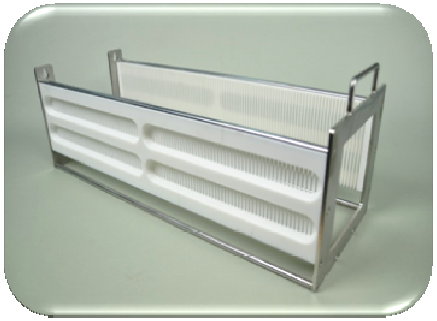
RENA CARRIER (PVDF)



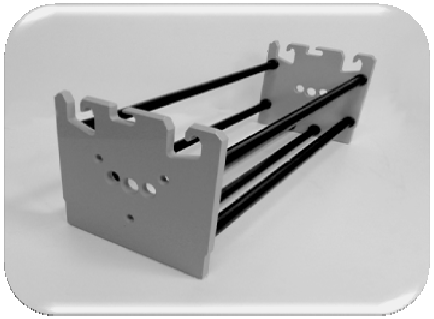
TRC CARRIER



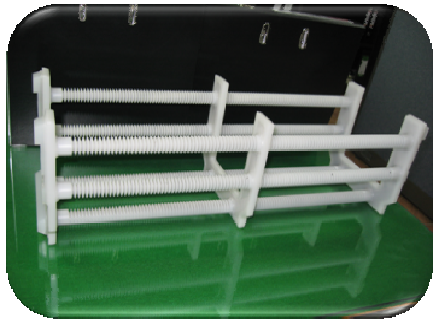
PP/PVDF CARRIER



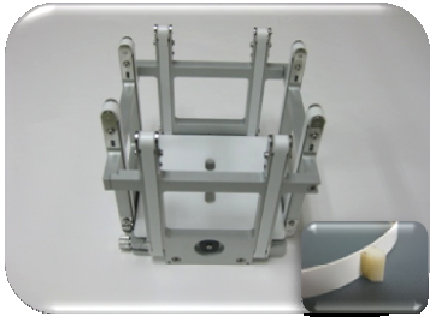
PTFE CARRIER



LSC CARRIER (ETCH)

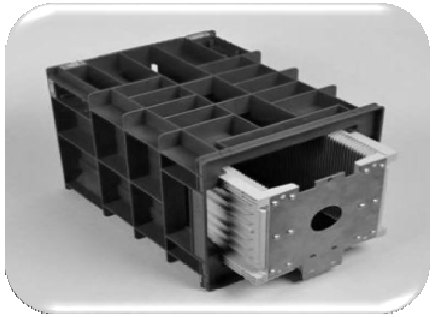


ETCH CARRIER (PVDF)

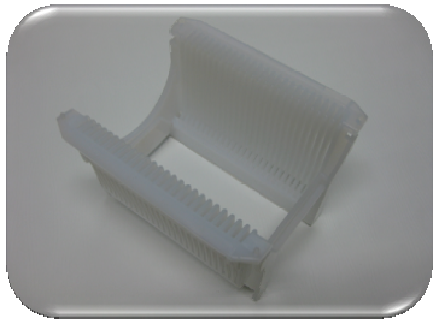


WAFER MAGAZINE (NEW)

PROFILE BELT (MAGAZINE)

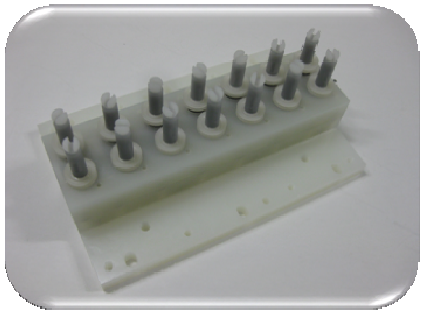


BUFFER CASSETTE



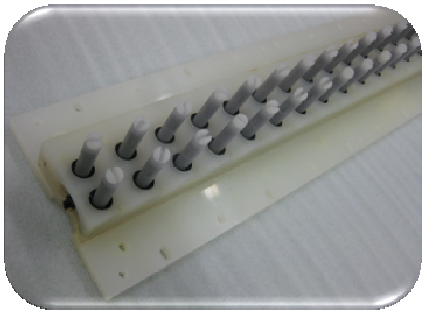
PFA/PP CARRIER

▶ SOLAR-Photovoltaic 部品•素材 分野 (Gear Box, Finger, Belt etc)

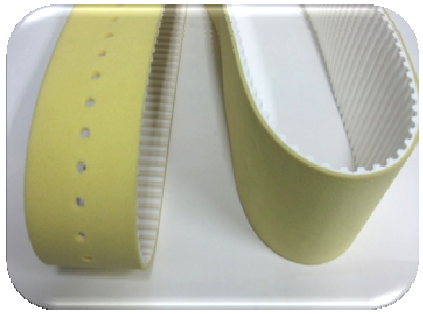


GEAR BOX (12F_14F)

GEAR BOX (26F)

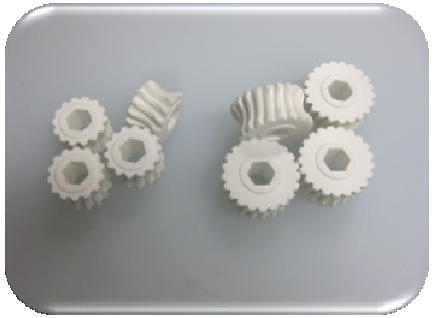


GEAR BOX (34F)



WASEP SUCTION BELT

FINGER-GEAR BOX

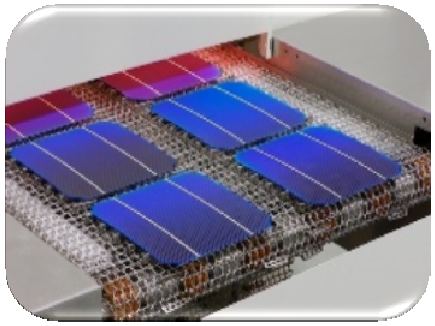


WORM WHEEL (Z-14,Z-21)

CHEMICAL FILTER CARTRIDGE

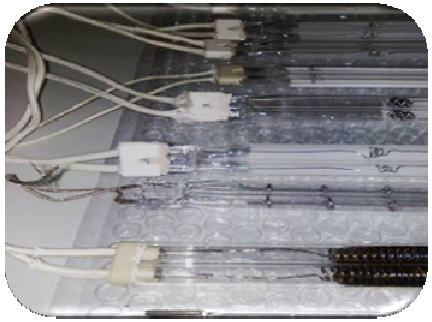
AIR-KNIFE, WETER KNIFE

SCREEN PRINTING OVEN BELT



FURNACE TRACK FLAT (SINTERING)

DI FILTER CARTRIDGE

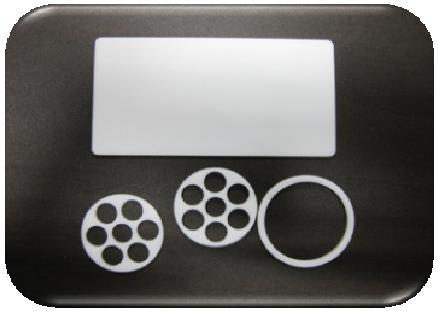


HEATER-UV LAMP

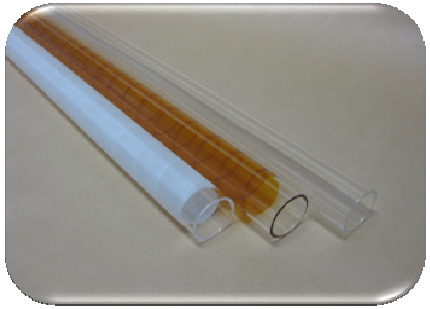
▶ SOLAR-Photovoltaic 部品・素材 分野 ((Quartz Tube, CFC Tray, O-Ring etc)

CFC TRAY-FLOWING (PECVD)

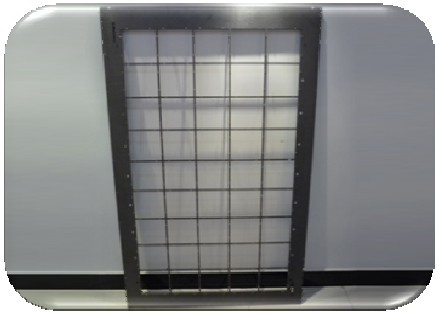
O-RING & SEAL (PECVD)



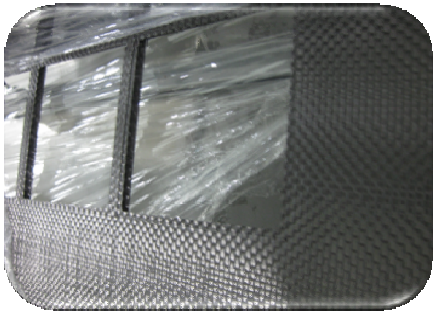
SUPPORTING DISK, COLLOR



QUARTZ –TUBE (PECVD)

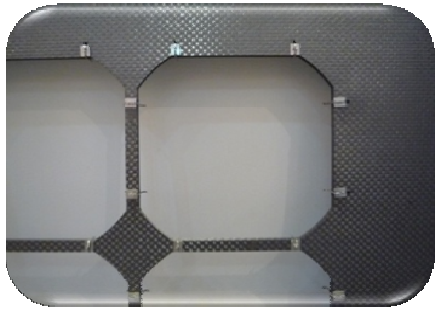


R&R 1860×1000×5tmm (OLD)



R&R 1860×1,000×2T (NEW)

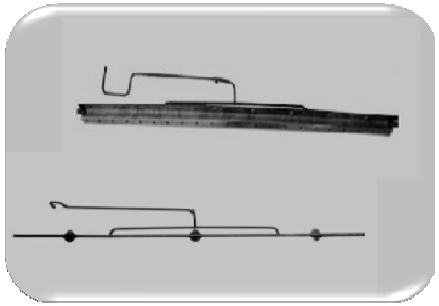
CFC TRAY用 RAIL



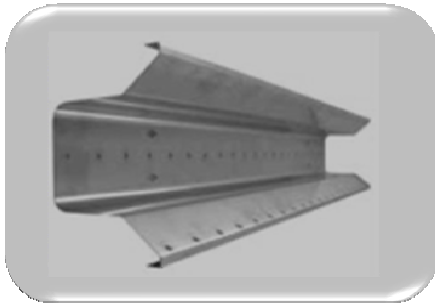
CFC TRAY & HOOK (OLD)

AL-CUP & THRUST COLLOR

5 Zone Heating Unit
Bayonet locking mechanism

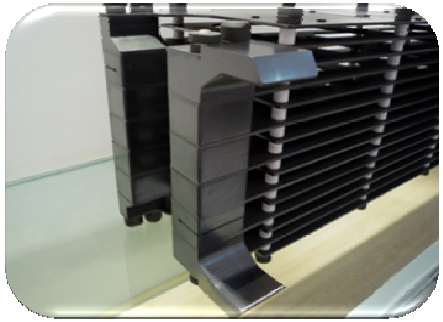


Gas Shower SiH4
Gas Shower NH3



U-Deposition Shield

▶ SOLAR-Photovoltaic 部品•素材 分野 (Graphite Boat, Diamond Wire, ITO-Target)

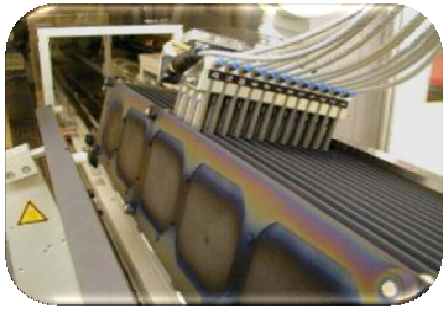


13/15 DISC GRAPHITE BOAT

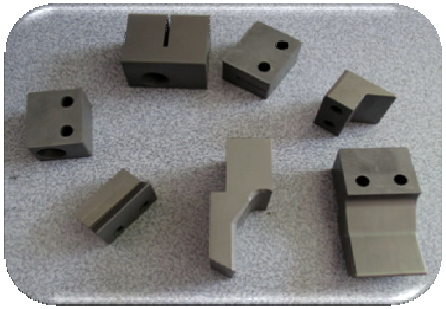
19/21 DISC GRAPHITE BOAT

C/C SHAFT (BOAT ASS'Y)

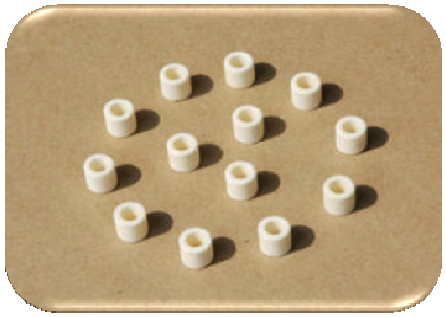
CERAMIC SHAFT (BOAT ASS'Y)



SUCTION HEAD FIXED ROBOT

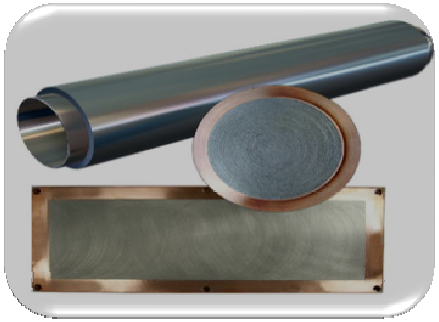


GRAPHITE BOAT BLOCK



CERAMIC BUSH (BOAT ASS'Y)

GRAPHITE GUIDE PIN & NUT



ITO-TARGET

CONVEYOR BELT & WHEEL

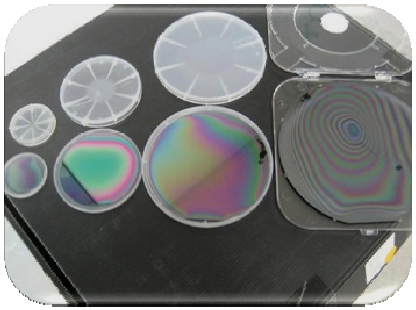
DIAMOND WIRE

石英-坩堝 (Quartz Crucible)

▶ LED / 2次 電池 / PCB / Electronics - 部品·素材

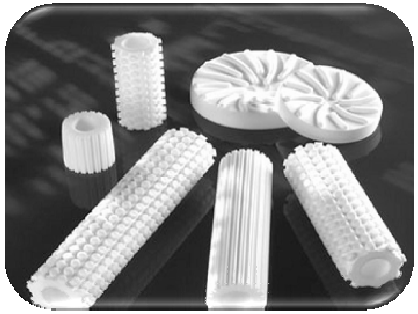
HYBRID WORLD

▶LED-SAPPHIRE 部品・素材 分野 (Wafer, Brush, Carrier& Cassette etc)

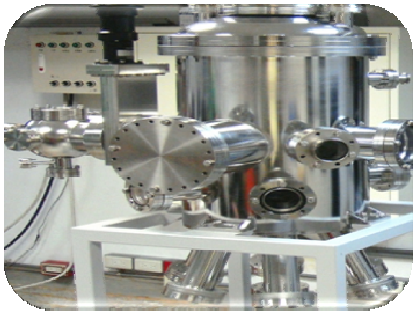


WAFER 2”/4” SINGLE BOX

WAFER CASSETTE & BOX



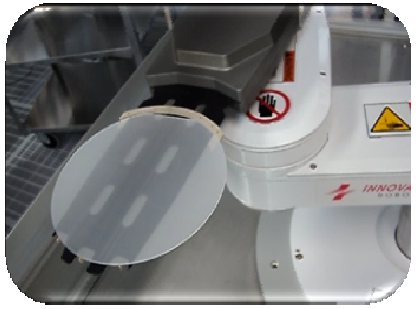
PVA-CLEANING BRUSH



VACUUM CHAMBER

WAFER 2” 25pcs LED TRAY

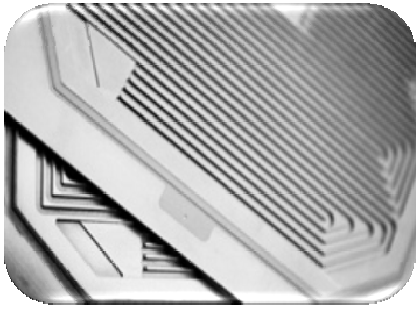
TUNGSTEN GROWING



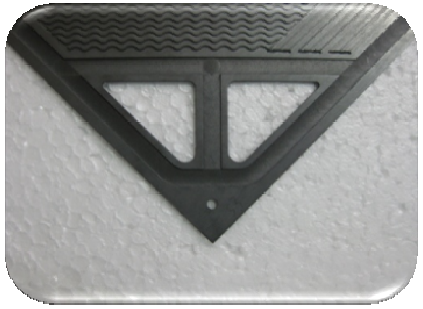
ROBOT-ARM-PAD

FILTER CARTRIDGE

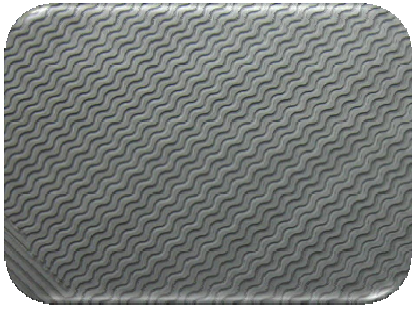
▶ 2次 電池 (BATTERY) 部品•素材 分野



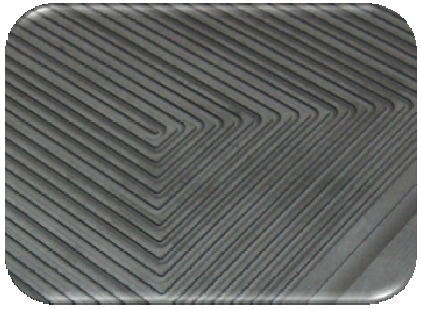
GRAPHITE BI-POLAR PLATE-A



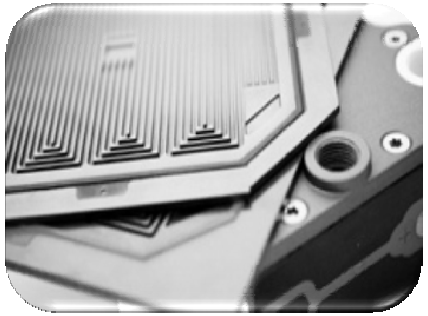
GRAPHITE BI-POLAR PLATE-B



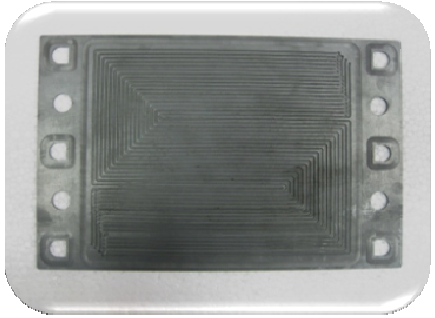
GRAPHITE BI-POLAR PLATE-C



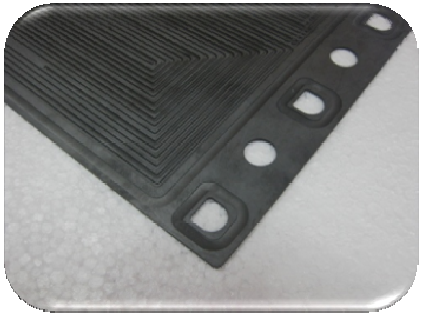
GRAPHITE BI-POLAR PLATE-C



GRAPHITE BI-POLAR PLATE-1

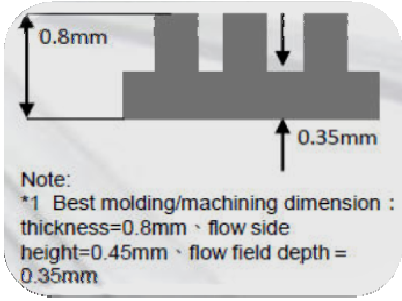


GRAPHITE BI-POLAR PLATE-2

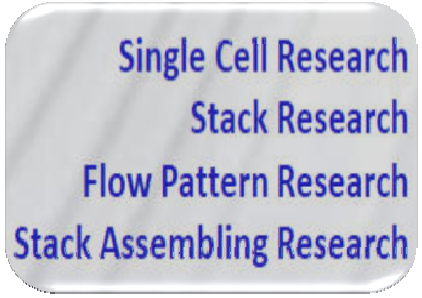


GRAPHITE BI-POLAR PLATE-3

GRAPHITE BI-POLAR PLATE-4



MOLDING & MACHINING DEPTH

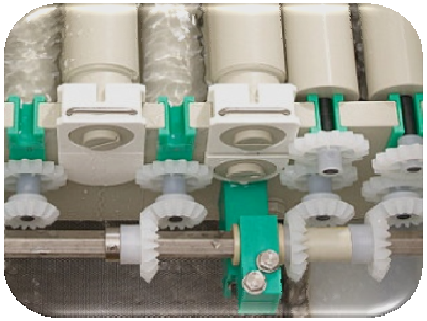


GRAPHITE BI-POLAR PLATE-2

GRAPHITE HC Plate Logo

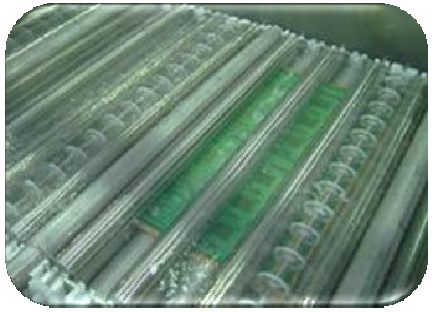
GRAPHITE BI-POLAR PLATE-4

▶ FPCB, FCCL - 部品•素材 分野 (Transport Roller, PI Film, Gear, Holder etc)

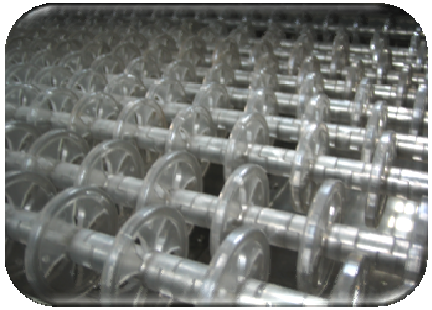


TRANSPORT GEAR & HOLDER

TRANSPORT ROLLER (PP)

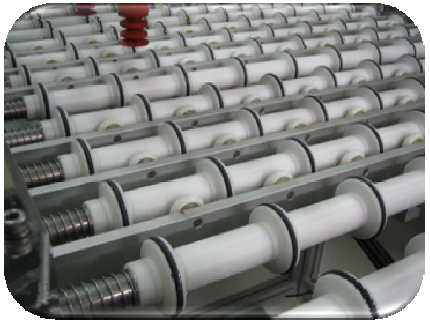


ROLLER (S304, PC)

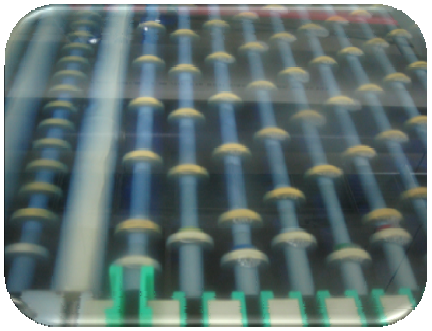


DRY-ROLLER (PC)

CARBON+PTFE COATING



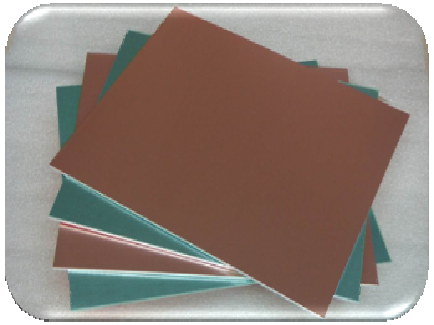
ROLLER (TEFLON & O-RING)



ROLLER (CARBON+PU+PP)

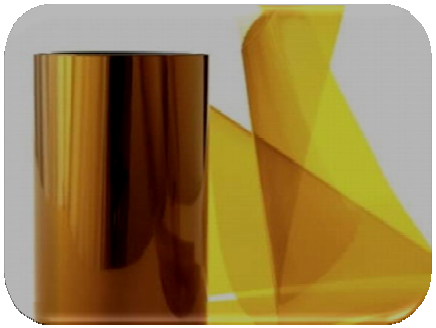
CARBON+PFA COATING

CARBON+PFA COATING



PCB MATERIAL

FPCB, FCCL-MATERIAL



PI FILM-MATERIAL

▶ ELECTRONICS - 部品•素材 分野 (High Voltage. Medium Energy Capacitor Charger Magnetizer)

NdFeB Magnet

Elevator Motors Magnets

Wind Turbines Magnets

Servo Motors Magnets

Segments

Blocks

Cylinders

Rings

Other Shapes

NiCuNi

White Zinc

Color Zinc

Epoxy

Phosphating

Teflon

Torsive Segment

▶ ELECTRONICS - 部品•素材 分野 (High Voltage. Medium Energy Capacitor Charger Magnetizer)

Shapes&Sizes

Most of NdFeB components are custom-made. Magnets can be made into segment, block, cylinder, ring, and varies of specifications, shapes and sizes as per customers' requirements.

Segments

Blocks

Cylinders

Rings

Other Shapes

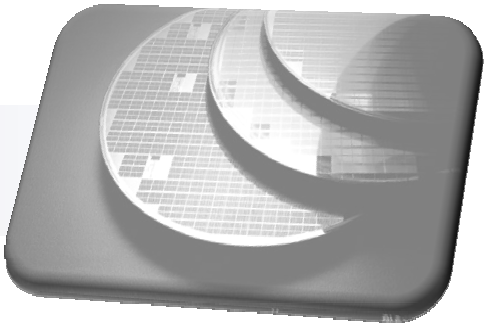
Torsive Segment

Elevator Motors Magnets

Wind Turbines Magnets

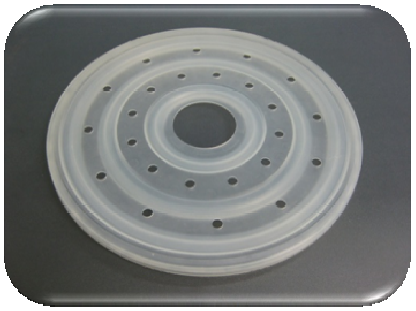
Servo Motors Magnets

▶ SEMICONDUCTOR - 製造装置用 部品・素材

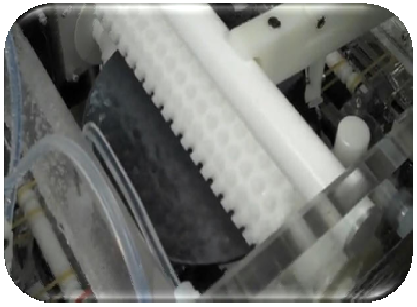


HYBRID WORLD

▶ SEMICONDUCTOR 部品•素材 分野 (PVA Brush, Polishing Carrier, Chuck etc)



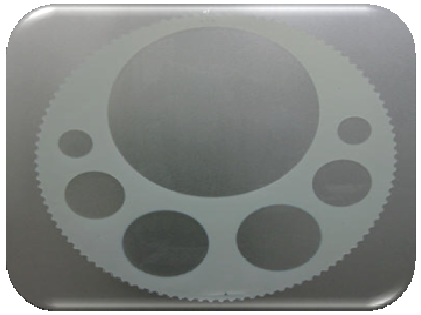
300MM MEMBRANE



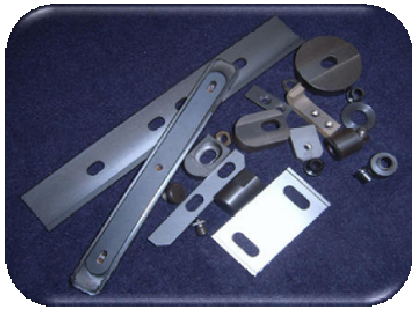
PVA ROLL BRUSH-CLEANING

SCRUBBER-PVA/NYLON BRUSH

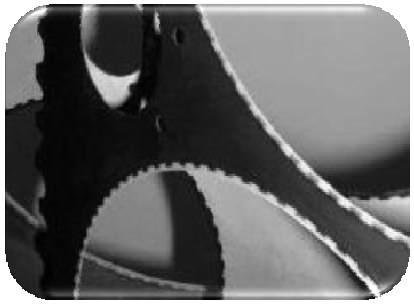
300MM-FOSB, FOUP



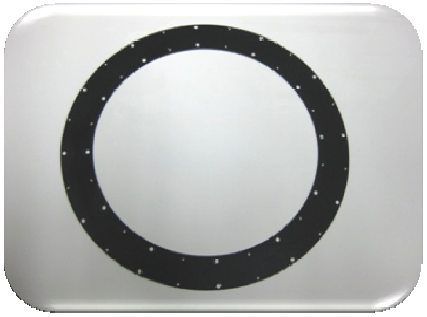
POLISHING CARRIER



PBI, PI, PEEK - PART

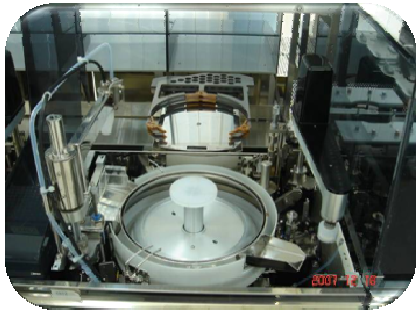


LAPPING CARRIER

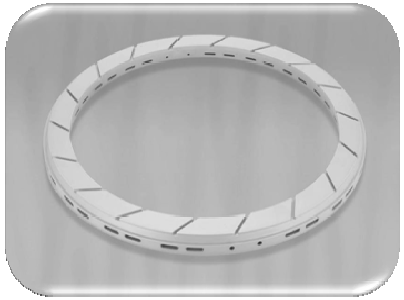


300MM FREXTURE

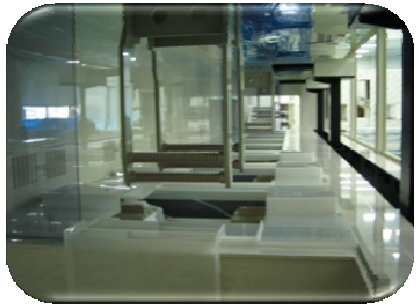
▶ SEMICONDUCTOR 部品•素材 分野 (FOSB, POUP, Cassette, Chuck, Filter etc)



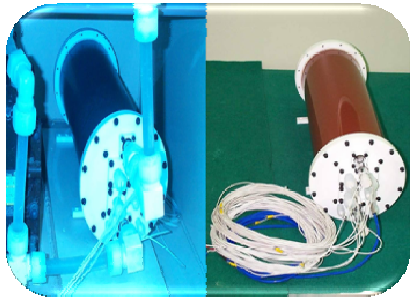
SPIN-GUIDE, CHUCK ARM



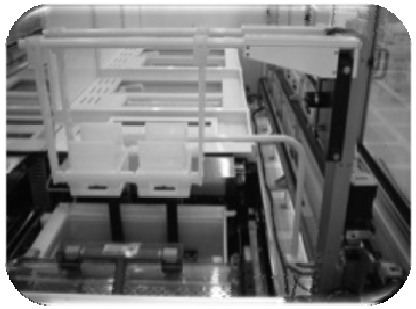
RETAINER-RING



WET STATION PEEK-CHUCK

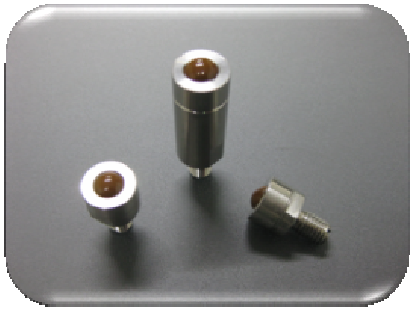


PAF-HEATER ASSEMBLY



WAFER CARRIER & ROBOT-ARM

WASHING SPIN MODULE



CLEAN-BALL TRANSFER

VACUUM CHAMBER

▶ 部品·素材 分野 : PVA SPONGE BRUSH

HYBRID WORLD

▶ SEMICONDUCTOR 部品・素材 分野 (PVA BRUSH-1)

1. PVA SPONGEの特長

2. PVA BRUSH ROLLERの特長

PVA BRUSH ROLLER (Nodule Type)は、表面に微細な気孔を持ち、
突起部を規則的に配列させることにより、PVA-SPONGE特有の
柔軟性で、洗浄面の損傷がなく優れた洗浄効果を実現させます。
PVAを化学反応させ形成されたSPONGEとして、優れた吸収・保水機能と
SOFTな触感、弾性を兼ね揃えているハイブリッド製品です。

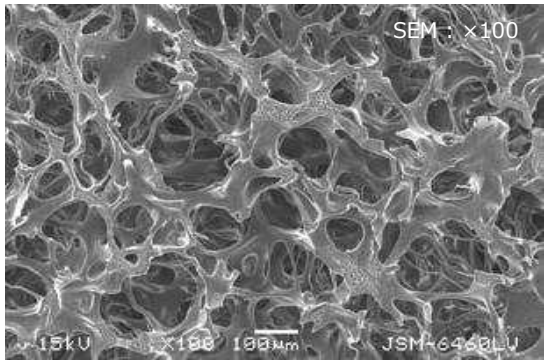
◈PVA SPONGEの特長

(1) 3次元の完全連続気孔(Open cell)の多孔質構造.
(Interconnected porous structure)
(2) OH基保有と毛細管形状により親水性が高い.
(Hydrophilic)
(3) 湿潤時の弾力性に優れている.
(Excellent wet state elasticity)
(4) 機械的強度が高い. (引張強度と耐磨耗性)
(Durable and lasting)
(5) 化学物質に対する強い抵抗性を持つ.(耐薬品性)
(High resistant to chemicals)
(6) 気孔のサイズやスポンジの形状など用途に合わせたカスタマイズが可能.
(Easily controlled pore size and shape)
(7) 静電気の発生がなく、CR用ワイパーやAbsorberとして理想的な特長を持つ.
(Anti-static function)
(8) 繊維質や塵の発生が無い.
(Lint and particle free)
(9) 他の物性を持つ外部物質を含有することができる.

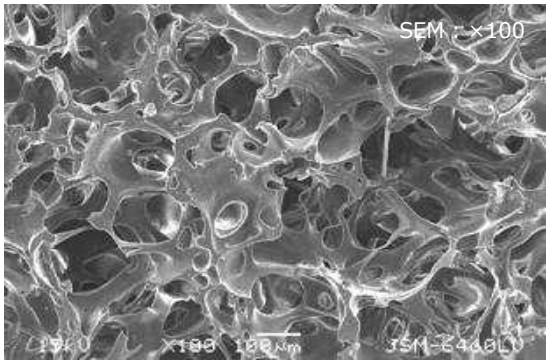
3. PVA BRUSH ROLLERの用途

(1) SEMICONDUCT : シリコンウエハー洗浄(50MM~300MM) CMP精密洗浄及び吸水、PHOTO-MASK洗浄及び吸水など
(2) FPD, TFT-LCD, OLED : 液晶ディスプレイ基板 GLASS CLEANING精密洗浄及び吸水など
(3) SOLAR CELL : シリコンウエハー洗浄、精密洗浄、電子用フィルム洗浄及び吸水など
(4) プリント基板、リードフレーム、プラスチックフィルムなどの洗浄及び吸水
(5) 自動車用ガラス、その他ガラス製品の洗浄、吸水
(6) その他の洗浄及び吸水

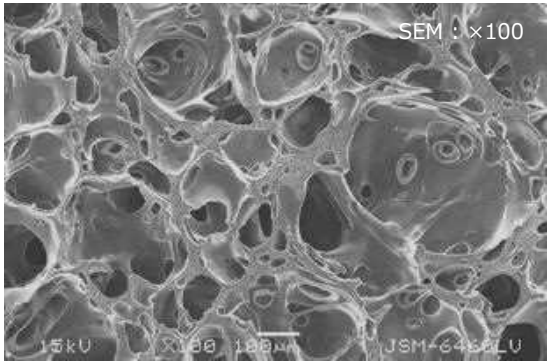
▶ SEMICONDUCTOR 部品•素材 分野 (PVA BRUSH-2)



当社 SIZE. 32(25×12)-50MM, SAMPLE



A社 SIZE. 32(25×12)-50MM, SAMPLE



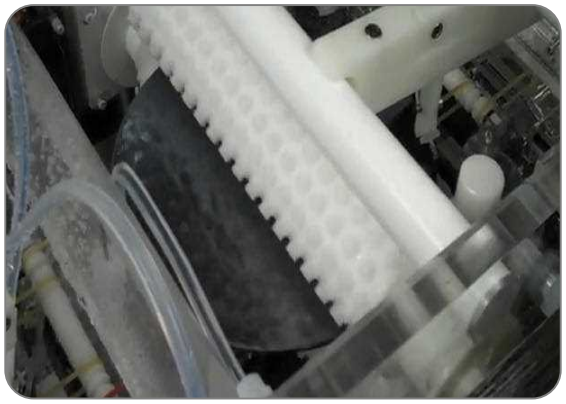
B社 SIZE. 32(25×12)-50MM, SAMPLE

◆Description

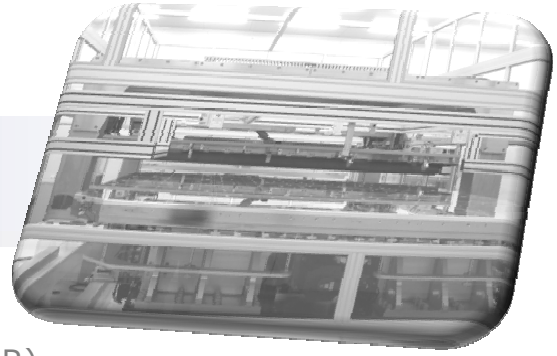
The Hydro Cell Nodule Brush Roller products for substrate cleaning in the semiconductor and rigid disk industries. PVA Brush Roller offer superbly clean, highly durable, precision PVA brushes for removing process contaminants from wafers and disk media..

◆Features

100% synthetic polyvinyl alcohol (PVA/PVF) construction.
DI rinse and Packaged in an ISO Class 1¬10 clean-room.
>17.8M DI water.
Precision cast and cut.
Sterilized with DI rinse (E-Beam) or NH4OH or H2O2.
ISO-certified converting facilities with strict quality.
Assurance protocols
Super-clean processing for minimal ions and extractable residues



▶ 製造装置分野



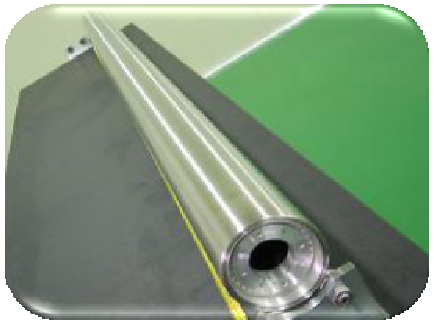
▶液晶 DISPLAY

- RUBBING ROLL (AL+HARD ANODIZING, CARBON ROLLER)

▶ 液晶 DISPLAY - 製造装置 : RUBBING ROLL-A

RUBBING ROLL (AL+COATING)

RUBBING ROLL (CARBON)



- **carbon fiber for RUBBING ROLL**

① Roll Size_G1/G2/G3/G4/G4.5/G5/G5.5/G6/G7/G7.5/G8

Ø130×850mm / Ø130×1,50mm / Ø130×1,520mm / Ø130×1,900mm

Ø140×1,720mm / Ø140×1,750mm / Ø140×1,900mm / Ø140×2,500mm / Ø140×2,750mm

Ø140×3,500mm / Ø140×3,750mm / Ø140×3,880mm / Ø140×4,000mm

② Roll Type A : Aluminum + Hard Coating Roll

③ Roll Type B : Carbon + Stainless Plasma Coating Roll / Stainless Tubing Roll

Carbon + Aluminum Tube Hard Coating Roll

④ Flange : Tungsten Carbide

⑤ Balance_G2.0

⑥ Application : 液晶Display Product Rubbing Line

- **CHARACTERISTICS**

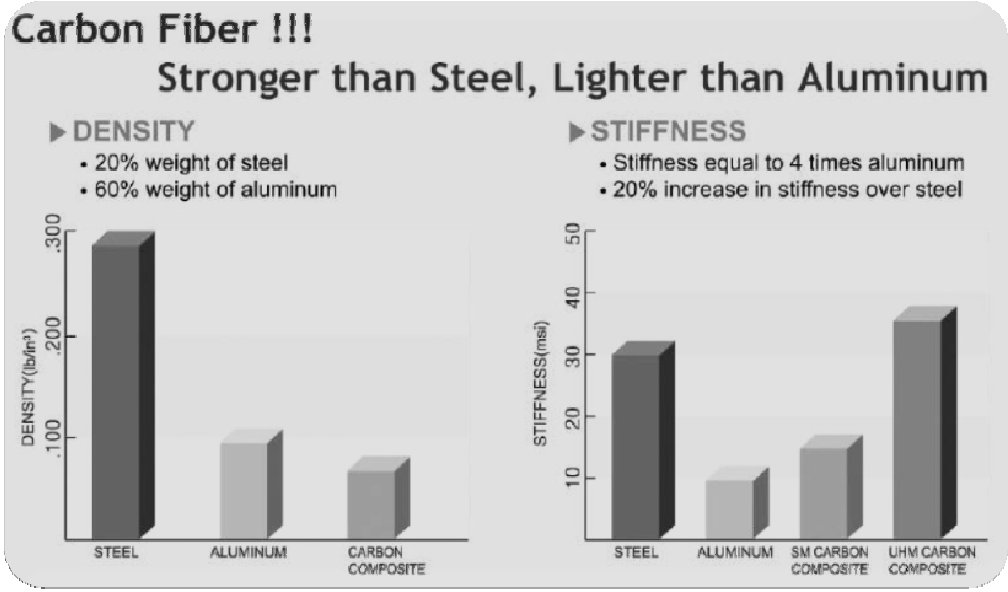
(1) Low Weight

(2) Low Rotation Inertia

(3) High Critical Speed

(4) Corrosion Resistance

(5) Thermal Stability



carbon fiber roller for LCD RUBBING M/C

Customized Application		
Specifications of Carbon Rolls		Application
Out Diameter	Ø30~Ø200	LCD Rubbing Rolls Film Rolls Paper Rolls Printer Rolls
Length	1,500~4,000mm	
Axial Stiffness	90~250GPa	
Surface Cladding	Metal Plasma Coating Metal Capsulation	

Characteristics of G6 Rolls (example)	
Size	Ø140mm L=3,750mm
Deviation form straightness & Roundness	15㎛
Deflection by weight & Distributed load	20㎛
Dynamic Balance	2g at 2,000RPM
Surface Cladding	Metal Plasma Coating Metal Capsulation
Surface Roughness	Ra 0.2 (μm)

Thank you for your cooperation!